September 15, 2010

Ex Parte

Julius Genachowski
Chairman
Federal Communications Commission
445 Twelfth Street, S.W.
Washington, D.C. 20554

Re: Unlicensed Operation in the Television Broadcast Bands
ET Docket Nos. 04-186, 02-380

Dear Chairman Genachowski:

Dell Inc., Microsoft Corp., and Spectrum Bridge, Inc. commend the FCC for moving forward with its Second Memorandum Opinion and Order on white spaces.[1] We look forward to helping to bring innovative broadband applications to the American public in the near future. By resolving this proceeding, the Commission will have made a great advance in spectrum policy and laid the groundwork for hundreds of millions of dollars of investment and new technologies that will benefit consumers nationwide.

Unfortunately, the Association for Maximum Service Television has, at the eleventh hour, pressed the Commission to impose a series of new regulations on white spaces which would stifle the "opportunities for investment and innovation in advanced Wi-Fi technologies"[2] the Commission would otherwise create.[3] We urge you to reject what is little more than an effort to throw up roadblocks in the path of what will be a great advance in wireless broadband for consumers.

1. Geolocation-Enabled White Space Devices Will Provide Extraordinary Protection to Licensees, Including Wireless Microphones.

MSTV argues that the FCC should retain a sensing requirement for geolocation-enabled devices because it "is the *only* mechanism for protecting against interference to licensed wireless microphones used for newsgathering purposes."[4] This is simply incorrect. In every community in the country, wireless microphones will have access to a substantial number of reserved channels where they can operate without any risk of interference from white spaces devices.

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1 Press Release, FCC, FCC Announces Tentative Agenda For September 23rd Open Meeting (Sep. 2, 2010) ("Open Meeting Notice").

2 *See* Open Meeting Notice at 1.

3 Letter from the Association for Maximum Service Television and National Association of Broadcasters, ET Docket Nos. 04-186, 02-380 (filed Aug. 27, 2010) ("MSTV/NAB letter").

4 MSTV/NAB letter at 1 (emphasis in original).

Personal/portable white space devices are not permitted to operate below channel 21. Higher-power fixed devices cannot operate adjacent to television stations. And the FCC already has set aside two more channels (12 additional MHz of spectrum) exclusively for wireless microphone use in 13 of the nation's largest markets.[5]

As the Commission explained, it reserved this large number of channels to accommodate "electronic news gathering crews and other media activities that operate on an itinerant basis" to "ensure that an adequate number of UHF channels are available for interference free operation of these important itinerant wireless microphone uses" even if they do not register in the database.[6] In short, the Commission already has reserved ample TV band spectrum for the very activities that MSTV maintains will not be protected if the sensing requirement is omitted for geolocation-enabled devices.

2. The Commission Should Reaffirm Its Decision to Enable Mode I Devices, and Any New Rule that Such Devices Communicate More Frequently with Mode II Devices Should be Accompanied by Adjustments to Channel Set Asides.

The Commission approved two classes of personal/portable devices in the *Second Report and Order*: Mode I devices (client devices that are controlled by a master TVBD that knows which channels to avoid) and Mode II devices (stand-alone devices that use geolocation to avoid incumbent licensees).[7] MSTV contends that the FCC should completely eliminate Mode I white space devices, either by explicitly prohibiting them or by requiring them to also implement geolocation, which would turn them into de facto Mode II devices.

The Commission should reaffirm its decision to enable Mode I devices. Because of their link with Mode II devices, Mode I devices always will robustly protect incumbents. Furthermore, allowing Mode I devices will result in numerous innovative broadband applications. These range from whole-home networks that support the "Internet of Things" to industrial applications such as sensors that support intelligent crop monitoring. Many of these applications simply are not feasible using only Mode II devices. Mode II devices cost more to produce and operate and consume more power—a critical consideration for battery-powered devices.

As a fall-back position, MSTV suggests that the FCC require white space devices to communicate with the base stations, and base stations to communicate with databases, on a "near real-time basis" instead of doing so on a daily basis as provided by the current rules.[8] This

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5 *See* 47 C.F.R. § 15.707.

6 Unlicensed Operation in the TV Broadcast Bands, *Second Report and Order and Memorandum Opinion and Order*, ET Docket Nos. 04-186, 02-380, ¶ 157 (rel. Nov. 14, 2008) ("Second Report and Order").

7 Second Report and Order, ¶ 124.

8 MSTV/NAB letter at 3. MSTV also objects that channel availability information from a master device could become stale based on an unlikely scenario in which the Mode I device loses its connection immediately before a master device does a daily check for updated database information, resulting in the device being able to operate for up to 48 hours before obtaining new database information. *Id.* at 2. To the extent that this is an

requirement is unnecessary because licensees typically know when they will be using TV band spectrum well before they begin operations, and because wireless microphones used for itinerant licensed applications can use reserved channels in the unusual instances where they are not able to register with the database in time. Increasing the number of times the device must communicate with the database also increases the costs of white space operations.

Nevertheless, if the Commission decides to require white space devices to check channel availability more frequently, Dell, Microsoft, and Spectrum Bridge urge the Commission to, at the same time, reduce the number of channels reserved for wireless microphones. As explained above, the Commission determined that white space devices should be excluded from certain vacant channels because the locations of itinerant licensed wireless microphones are occasionally not known in advance. If, however, a white space device receives database information in near real-time, newsgathering operations and other itinerant licensed users can simply enter their location into the database, eliminating the need to restrict access to those channels at times when they are not in use. Therefore, the Commission can safely reduce the number of reserved channels while still being sure that any Part 74 device will have access to spectrum when it is needed.

3. The Commission Should Authorize Multiple Database Providers.

MSTV also maintains that removing the spectrum sensing requirement for geolocation-enabled white space devices somehow justifies designating a single database provider with "no affiliation with manufacturers and no other conflicting business interests."[9] This proposed restriction already has been addressed at length in this proceeding. There is widespread agreement that the FCC should select multiple providers to promote innovation and competition in the market for database services, aid resiliency and reliability, and avoid creating a chokepoint for white spaces networks.[10] Moreover, MSTV's incredibly vague "conflicting business interest" requirement – which presumably would apply to any entity that supports white space operations – could potentially disqualify every database applicant. The FCC's rules explicitly require databases to maintain a specific set of objective information, and prohibit database operators from discriminating in favor of certain users.[11] MSTV offers no reason to believe that database operators would flout the FCC's rules. The Commission should therefore reject this suggestion.

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issue, the solution is to require a modest increase in the number of times a Mode I device communicates with a master device during the day, not to eliminate Mode I operations.

9 MSTV/NAB letter at 4.

10 *See, e.g.*, Comments of Nokia Inc., ET Docket No. 04-186 (filed Feb. 12, 2010); Comments of Atheros Communications, Broadcom, Dell, Hewlett-Packard, Marvell, Microsoft, Motorola, Nokia, Philips, and the Wireless Internet Service Providers Association ("TVWS Group") (filed Feb. 12, 2010); Comments of IEEE 802.18 (filed Feb. 1, 2010); Comments of Public Interest Spectrum Coalition ("PISC") (filed Feb. 12, 2010); Reply Comments of Google Inc. (filed Feb. 24, 2010).

11 *See* 47 C.F.R. § 15.715(a),(f).

4. The White Spaces Rules Should Not Impose Additional Restrictions on Databases and Devices.

Finally, MSTV presses the Commission to impose a hodgepodge of other restrictions for database and device operations.[12] For example, MSTV calls for the FCC to require a "kill switch" on every consumer device. This is unnecessary because the FCC already requires databases to have the ability to send a "no channels are available" signal to certain devices or classes of devices, effectively ceasing all operation.[13] MSTV also argues that the Commission should impose regulations to prevent "spoofing" of white space databases and devices. This is also unnecessary because security is one of the specific criteria set by the Office of Engineering and Technology for determining whether to designate a database administrator.[14] As with other networks regulated by the Commission, the details of security practices should be implemented by industry rather than chosen by the Commission. Finally, MSTV suggests that the Commission should mandate that all white spaces devices be capable of "automatic geolocation capability."[15] This would require that every device include GPS functionality. As discussed above, this would eliminate Mode I classification. The FCC should therefore not impose this new regulation. Separately, the Commission properly allows higher-powered fixed devices to establish location in two ways, either by using GPS or through professional installation. When a professional installer puts a fixed device in place, the location of that device is locked into the equipment. Requiring even these devices to include GPS capability – despite the fact that their location is known and will not change – is unnecessary and will drive up cost with no associated benefit.

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12 MSTV/NAB letter at 2-5.

13 *See* 47 C.F.R. § 15.715(j).

14 *See* Office of Engineering and Technology Invites Proposals from Entities Seeking to be Designated TV Band Device Database Managers, *Public Notice*, ET Docket No. 04-186, at 3 (rel. Nov. 25, 2009).

15 MSTV/NAB letter at 4.

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Dell, Microsoft, and Spectrum Bridge applaud the Commission's decision to establish final rules for white space operations, and share the Commission's optimism that enabling access to underutilized television band spectrum will enable a wide range of innovative broadband applications and services. By rejecting the restrictions proposed by MSTV and adopting reasonable rules for white space use, the Commission will ensure that industry can begin bringing the benefits of white spaces to the American public in the near future.

Respectfully submitted,

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